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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,600	08/25/2003	Laughlin G. McCullough	2002U014.US	2400

7590 05/20/2004
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EXAMINER

LU, C CAIXIA

ART UNIT PAPER NUMBER

1713

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

CP2

Office Action Summary**Application No.**

10/647,600

Applicant(s)

MCCULLOUGH ET AL.

Examiner

Caixia Lu

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 33 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,8,10,13-17,19-21,23-28 and 30-32 is/are rejected.
- 7) ☐ Claim(s) 3,5,9,11,12,18,22,29 and 30 is/are objected to.
- 8) ☐ Claim(s) 1-34 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 08/25/03.
- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19, drawn to a process for making catalyst composition and Claims 20-32 drawn to a polymerization process comprising said catalyst making process, classified in class 502, subclass 152.
 - II. Claims 33 and 34, drawn to a polymer product, classified in class 526, subclass 348.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the polymer can be prepared by a different catalyst composition such as a non-fluorided metallocene catalyst composition.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for one of the groups is not required for the rest of the groups, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. This application contains claims directed to the following patentably distinct species of the claimed invention: various heterocyclic compounds which define the cocatalyst.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, Claim 1 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the

case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

7. During a telephone conversation with Attorney Kevin Faulkner on May 14, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-32. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "bimodal polyolefin" lacks antecedence.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-2, 4-6, 8, 10, 13-16, 19-21, and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Becke et al. (US 2002/0052446 A1).

The instant claims are directed to a process of preparation of a fluorided metallocene catalyst comprising contacting a nitrogenous metallocene compound with a fluoriding agent of a fluorided acid and a polymerization process comprising said catalyst preparation process.

Becke teaches a process of making a catalyst complex by contacting a nitrogenous metallocene compound) and a fluorided acid. For example, in Example 1, Becke demonstrates the preparation of the catalyst by contacting rac-(EBTHI)Zr(F){2-(2-pyridine)ethyl} (the nitrogenous metallocene compound) with ammonium fluoride (the fluorided acid) with a yield of 70%. The preparation of catalyst complex with near 100% yield is disclosed in Example 8, and polymerizations in the presence of those catalysts are demonstrated in Examples 3 and 8. Becke's teaching encompasses the instant claims.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 17, 26, 27, 28, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becke et al. (US 2002/0052446 A1) alone or in view of Govoni et al. (US 5,589,549).

Claim 17 limits drying fluoride metallocene compound in the presence of magnesium sulfate (claim 17), claim 26 limits conducting the polymerization in a gas phase, claim 27 limits the catalyst composition to comprise a support, claim 28 limits the support to be calcined, and claims 30 and 32 limit the metallocene catalyst system further comprising a Ziegler-Natta catalyst to provide a bimodal polyolefin.

While the Becke does not teach drying the fluoride metallocene in the presence of magnesium sulfate, the examiner takes official notice that drying the reaction product with common drying agent such as magnesium sulfate is routine practice in the art.

Becke's teaching is relied upon as shown above. Furthermore, Becke teaches the catalyst composition can be supported in carrier such as silica and the polymerization can be conducted in gas phase (page 5, paragraph [0131]-[0135]). Although Becke does not teach the density of the polymer, the density range of the instant claim 31 is commonly found among polyolefin. Therefore, it would have been obvious to a skilled artisan at the time the invention to employ Becke's teaching to prepare the a supported catalyst composition, conduct the polymerization in gas phase and provide polyolefin with desired density by using proper olefin monomers since such

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is conventionally done and within scope of Becke's teaching and in the presence of any showing of criticality and unexpected results.

Govoni teaches that a Ziegler-Natta catalyst and a metallocene catalyst can be used together to provide a polyolefin with bimodal molecular weight distribution (col. 7, lines 17-68). Therefore, it would have been obvious at the time of the invention to employ Govoni's teaching to combine Becke's catalyst composition with the Ziegler-Natta catalyst in order to provide a polyolefin with bimodal molecular weight distribution.

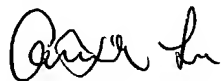
Allowable Subject Matter

15. Claims 3,5,9,11,12,18,22,29 and 30 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The cited prior art does not teach or reasonably suggest the claimed subject matter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.


Caixia Lu, Ph. D.
Primary Examiner
Art Unit 1713
May 14, 2004